Amendments to the Claims

Please amend the claims without prejudice, as follows and consider the subsequent remarks. This listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims

1. (Currently amended) A physical property sensor die for monitoring the properties of a fluid, comprising:

a substantially solid insulating sensor body having a front surface and a back surface, wherein the front surface is adapted to interface with the fluid, and the sensor body having a known thermal conductivity, wherein the sensor body has a plurality of openings extending from the front surface to the back surface;

a plurality of independent sensing elements coupled to the front surface for monitoring the properties of ~~a~~ the fluid, the plurality of independent sensing elements including at least one thermal sensor and at least one heater, wherein the thermal conductivity of the sensor body is low enough to substantially prohibit heat transfer between the plurality of independent sensing elements via the sensor body, and wherein the sensor body includes a continuous solid glass material ~~below~~ opposite the plurality of sensing elements from the front surface thus providing for a more robust sensor die; and

a connection material filling the plurality of openings such that the plurality of independent sensing elements are electrically connected to corresponding connection material on the back surface, and the connection material is configured to accommodate connection of the connection material to an electronics substrate.

2. Canceled

3. Canceled

4. (Previously presented) The physical property sensor die of claim 1 wherein the plurality of sensing elements include an environmental sensor.

5. (Previously presented) The physical property sensor die of claim 1 wherein the plurality of sensing elements include at least a second thermal sensor.

6. (Previously presented) The physical property sensor die of claim 1 wherein the sensor body is made up of a photosensitive glass.

7. (Currently amended) The physical property sensor die of claim **[[1]]** 14 wherein the first material in the sensor body is made up of a ceramic.

8. (Previously presented) The physical property sensor die of claim 1 wherein the sensor body is made up of a highly melting glass.

9. (Currently amended) The physical property sensor of claim **[[1]]** 14 wherein the first material in the sensor body is highly insulating silicon.

10. (Previously presented) The physical property sensor die of claim 7 wherein the ceramic is alumina.

11. (Currently amended) The physical property sensor die of claim 8 wherein the ~~ceramic is~~ highly melting glass is fused silica.

12. (Canceled)

13. (Previously presented) The physical property sensor die of claim 1 wherein the plurality of sensing elements are constructed of platinum coated on the front surface.

14. (Currently amended) The physical property sensor die of claim 1 wherein the substantially solid sensor body is made up of the continuous solid glass material below the plurality of sensing elements ~~a first material~~ and a second material~~, wherein the first material is positioned directly below the plurality of sensing elements~~.

15. (Currently amended) The physical property sensor die of claim **[[1]]** 14 wherein the substantially solid sensor body includes a plug made of the continuous solid glass material ~~a first material~~ positioned below the plurality of sensing elements, the plug being surrounded by the **[[a]]** second material which makes up the remainder of the substantially solid sensor body.

16. (Previously presented) The physical property sensor die of claim 15 wherein the plug is substantially cylindrical.

17. (Canceled)

18. (Canceled)

19. (withdrawn) A sensor for measuring physical properties of a fluid adapted to be attached to a sensing circuit, the sensor comprising;

a sensor die made up of a substantially solid insulating sensor body and a plurality of sensing elements, wherein the plurality of sensing elements are positioned on a front surface of the substrate and are in communication with a plurality of die vias to allow electrical signals to be transmitted to a back surface of the substrate, the back surface being opposite the front surface and substantially parallel thereto; and

a sensor substrate attached to the sensor die in juxtaposition with the back surface, the sensor substrate configured for further attachment to the sensing circuit through a plurality of substrate vias, the substrate vias being in contact with the die vias to allow electrical contact to the sensing circuit.

20. (withdrawn) The sensor of claim 19 further comprising a passivation layer covering the sensing elements.

21. (withdrawn) The sensor of claim 20 wherein the passivation layer is silicon nitride.

22. (withdrawn) The sensor of claim 19 wherein the plurality of sensing elements include a heater and a thermal sensor.

23. (withdrawn) The sensor of claim 19 wherein the plurality of sensing elements include a heater, a first thermal sensor and a second thermal sensor.

24. (withdrawn) The sensor of claim 19 wherein the sensor body is fabricated from a photosensitive glass.

25. (withdrawn) The sensor of claim 20 wherein the sensing elements are platinum-coated structures and are covered by the passivation layer.

26. (withdrawn) The sensor of claim 19 wherein the vias include holes in the sensor body extending from the front surface to the back surface.

27. (withdrawn) The sensor of claim 19 further comprising a plurality of interconnect structures positioned on the sensor body and in communication with the die vias to provide appropriate interconnection for the sensing elements.

28. (withdrawn) The sensor of claim 19 wherein the sensor body includes a plug of a first material positioned beneath the sensing elements and a second material making up the remainder of the substrate and surrounding the plug.

29. (withdrawn) The sensor of claim 28 wherein the first material is glass and the second material is alumina.

30. (withdrawn) A method for creating a glass based property sensor, comprising:

masking a glass die substrate using a mask having a predetermined masking pattern, wherein the mask is made of a material to selectively block predetermined light signals;

irradiating the masked glass die substrate so as to expose the unmasked portions of the glass die substrate;

annealing the glass die substrate so as to remove the mask and crystallize those portions of the glass die substrate that were not covered by the mask;

etching the crystallized portions of the glass substrate; and

coating predetermined areas of the glass die substrate with a conductive material so as to provide conductive pathways for electrical signals.

31. (withdrawn) The method of claim 30 wherein the step of etching provides holes extending from a front side of the substrate through the entire back side of the substrate.

32. (withdrawn) The method of claim 30 wherein the holes make up vias for providing electrical contact communication points through the glass die substrate.

33. (Canceled)

34. (Canceled)

35. (Previously presented) The physical property sensor die of claim 1 wherein the sensor body and the connection material have a substantially similar coefficient of thermal expansion.

36. (New) The physical property sensor die of claim 14 wherein the continuous solid glass material is positioned directly below the plurality of sensing elements.